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BEEF TRADE PREFERENCES AND INTENSITIES IN THE SOUTHERN AFRICAN CUSTOMS UNION

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Inter- and intra-industrial beef trade in the Southern African Customs Union (SACU) and between SACU and the rest of the world is investigated by calculating different coefficients. Concentration of imports to and exports from the SACU have increased over time. Changes in intra-regional trade are dominated by the EU. The high level of concentration and intra-regional trade is mainly a result of trade agreements such as Lomé. This has led to greater inequality with respect to beef trade. Beef producers in the SACU are vulnerable to changes in EU trade policy.

Trade relations between South Africa and Namibia are intense, but not between South Africa and Botswana. Botswana prefers to trade with the rest of the world and specifically the EU. Beef trade with the rest of the world is becoming more important for South Africa, and this must be disturbing to Namibian beef producers. Producers from Botswana and Namibia are very dependent on their market in the EU, which they obtained through the Lomé Convention. This situation is however not sustainable and clearly shows the impact of EU policies on the region.

BEESVLEISHANDELSVOORKEURE EN -INTENSITEITE IN DIE SUIDER-AFRIKAANSE DOEANE UNIE

Inter- en intra-industriële beesvleishandel in die Suider-Afrika Doane Unie (SADU) en tussen die SADU en die res van wêreld is ondersoek deur die berekening van verskillende koeffisiënte. Konsentrasie van invoere na en uitvoere vanaf die SADU het oor tyd toegeneem. Veranderinge in intra-industriële handel word deur die EU gedomineer. Die hoë vlak van konsentrasie en intra-industriële handel is grootliks die gevolg van handelsooreenkomste soos Lomé. Dit het gelei tot groter ongelykheid in beesvleishandel. Beesvleisprodusente in die SADU is kwesbaar vir veranderings in EU handelsbeleid.

Handelsverhoudinge tussen Suid-Afrika en Namibië is intensief, maar nie tussen Botswana en Suid-Afrika nie. Botswana verkies om handel te dryf met die res van die wêreld, en meer spesifiek die EU. Beesvleishandel met die res van die wêreld raak toenemend belangriker vir Suid-Afrika en dit moet tot groot kommer vir Namibiese beesvleisprodusente wees. Produsente in Botswana en Namibië is afhanklik van hulle marksegment in die EU wat hulle verkry het deur middel van die Lomé Konvensie. Die situasie is egter nie volhoubaar nie en toon duidelik die impak van EU beleid op die streek.

1. INTRODUCTION

Traditionally Namibia and Botswana are surplus producers of beef with South Africa as Namibia's main export market and the EU as Botswana's main export market. In 1994 the export of cattle, cuts, carcasses and canned meat to South Africa from Namibia amounted to 64,8% of Namibia's total supply (Meat Board of Namibia, 1994). In contrast Botswana exported 64,9% of its beef to the EU (Botswana Meat Commission, 1994). South Africa is a net importer of beef, with most imported beef originating from Namibia and Botswana. Swaziland and Lesotho are not a major players on the South African market, nor are they major players on the Namibian or Botswana markets. The effect of liberalisation on a particular country will depend on the relative position in which that country finds itself within world trade. It is therefore necessary for each country to reassess its position in world trade relative to other countries. This will, amongst others, involve an assessment of existing trade patterns and trade agreements as well as possible threats and opportunities.

International trade in beef by member countries of the Southern African Countries Union is mainly restricted to countries in the EU. Under Lomé IV and the beef protocol a number of ACP countries, including Namibia and Botswana, have been granted preferential access to the EU market. Botswana was one of the first countries to receive a quota to export beef to the EU under the Lomé Convention. Currently she has a quota to export 19 000 metric tonnes of beef annually. Namibia only became part of the Lomé Convention in 1990. Under Lomé IV, Namibia is permitted to export 60 000 tonnes of beef cuts to the EU over a five year period, with the option to continue with the quota for

another five years. Changes in policies in the EU and trade agreements with the EU are therefore very important for the beef industries of Namibia and Botswana and may affect their sustainability. This will again have an influence on beef trade on the internal SACU market. Stevens (1994) found a decline in the relative importance of African trade with the European Community. He also mentions that there is some doubt as to whether there will be a Lomé V when the present Convention expires at the end of the decade. Intra-SACU trade will consequently become more important if they loose their quotas.

Namibia and Botswana receive a higher price for beef sold to the EU than what they receive in South Africa, since beef prices in the EU are artificially maintained at levels well above world market prices. Added to this they have to pay only 10 per cent of the going levy (Nepu, 1992). However, according to Van der Linden (1992), this market is not as secure as it seems since prices are not guaranteed. Stringent animal health regulations also render the EU a volatile market. This resulted in almost zero beef exports to the EU in 1980. Higher prices received on the EU market also contributed to the over-expansion of the cattle industry in Botswana. Another factor that influence fluctuations in exports is the occurrence of droughts.

In this article, beef trade in the Southern African Customs Union (SACU) and specifically South Africa, Namibia and Botswana is investigated with the aim to provide a thorough understanding of its working. This is deemed essential due to the changing marketing environment domestically and abroad. The focus will be on inter- and intra-regional trade of beef in the SACU and with the rest of the world. Trade preferences will also be investigated.

2. BEEF TRADE PATTERNS

This section investigates the main trends in inter- and intra-industrial beef trade in the Southern African Customs Union (SACU) and between the SACU and the rest of the world. Beef trade preferences and intensities are especially important to Botswana and Namibia, since they are surplus beef producers with a dependence on the world export market. Changes in trade preferences hold important implications for marketing strategies and the sustainability of the individual beef sectors.

The need to investigate inequality or the degree of concentration arises from two questions: (1) Is the distribution of trade amongst countries, regions and economic groups now more equal than in the past, and (2) do government intervention, trade agreements and trade barriers lead to greater equality or inequality with respect to trade?

Concentration of regional exports and imports and bilateral trade intensities can be used to determine the countries whose commodities have comparative advantages. It also shows preferences regarding trading partners (Sartorius von Bach, 1993). One usually does not only want to be able to determine the before and after effects of a certain policy or agreement, but to go further and quantify the differences in inequality between different observations or distributions (Atkinson, 1970).

2.2 Concentration in beef trade

The degree of concentration can vary from a situation with no concentration (total diversification) to a situation of total concentration. Herrmann (1985) and Lubbe (1992) mention different ways of measuring concentration. Atkinson (1970) states that the conventional approach in nearly all empirical work is to adapt some summary statistic of inequality with no very explicit reason being given for preferring one measure rather than another. This paper is based on relative concentration measures. Gini-coefficients are used to determine inequality/skewness or concentration in beef trade with the rest of the world.

Recent studies concerning the calculation of Gini-coefficients with respect to trade were performed by Sartorius von Bach (1993); Grote and Sartorius von Bach (1994); Sartorius von Bach and Van Rooyen (1995). According to these authors the Gini-coefficient is higher the more a country has concentrated its exports on one region, while a low Gini-coefficient indicates a high level of diversification of the exporting country or region. A

detailed discussion of the calculation of Gini-coefficients can be seen in Atkinson (1970); Herrmann (1985); Sydmaester and Hammond (1995).

2.2.1 Results

The Gini-coefficients were calculated for each of the different categories (carcasses and half carcasses, other cuts and deboned beef) of beef imports and exports. A Gini-coefficient equal to zero denotes that trade is equally distributed amongst regions/countries; if it is equal to one, trade is restricted to only one country. The extreme points are seldom actually reached with respect to a total commodity group. However, due to the diversity that exist within a commodity group it is possible that a certain quality, class etc. may actually reach one or zero.

• Imports

Table 1 shows the calculated Gini-coefficients with respect to the different categories of bovine meat imports according to different years. In many instances imports to the SACU came only from one country. For example, in 1992 only Ireland exported "other cuts" (chilled) to the SACU. In these cases the Gini-coefficient is equal to one, thus indicating total concentration.

It is evident from Table 1 that concentration of imports to the SACU have increased over time. Concentration with respect to deboned (chilled) bovine meat increased from 0,56 in 1992 to 0,90 in 1994. When comparing other classes and cuts which have been traded over time, one can see that the degree of concentration varied very little.

The high degree of concentration for all categories of imported meat to the SACU shows the SACU's preference to import from a selected few countries. These countries are mainly members of the EU and produce surpluses of a lower quality beef. A demand for this category of beef exists in the SACU especially because it is normally cheaper than the beef produced in the SACU. CAP reforms and trade liberalisation may cause this situation to change and more beef may in future be imported from other non-EU countries.

• Exports

The Gini coefficients calculated for beef exports are presented in Table 2. It is clear that exports are also highly concentrated. The high level of concentration can be attributed to bilateral trade agreements, such as Lomé. Stringent sanitary and phyto-sanitary measures are probably

Table 1: Concentration of SACU's bovine meat imports (1992-1994)

Year	Classes	Different cuts	Coefficients	
			Chilled	Frozen
1992	Bone in	Carcasses and half carcasses	-	1
		Other cuts	1	-
	Deboned		0,56	0,77
1993	Bone in	Carcasses and half carcasses	-	1
		Other cuts	1	-
	Deboned		0,57	0,76
1994	Bone in	Carcasses and half carcasses	-	0,98
		Other cuts	1	0,76
	Deboned		0,90	0,81

Note: The hyphen (-) means that no trade occurred

Table 2: Concentration of SACU's bovine meat exports (1992-1994)

Year	Classes	Different cuts	Coefficients	
			Chilled	Frozen
1992	Bone in	Carcasses and half carcasses	0,99	0,59
		Other cuts	0,85	0,58
	Deboned		0,88	0,81
1993	Bone in	Carcasses and half carcasses	0,76	1
		Other cuts	0,91	0,78
	Deboned		0,89	0,83
1994	Bone in	Carcasses and half carcasses	0,99	0,99
		Other cuts	0,99	0,79
	Deboned		0,96	0,95

also a reason for this high degree of concentration, since some countries like Japan, even though they have an increasing demand for bovine meat, do not import bovine meat from countries which have foot and mouth disease breakouts (Colverb, 1995; Otto, 1990; FAO, 1995). The EU, on the other hand, stipulates that no bovine meat originating from foot and mouth disease regions within countries may be exported to them. This is one reason why abattoirs which process beef in Botswana and Namibia for exports have to be EU approved. Even though Botswana and Namibia export beef to the EU under Lomé, any exports are prohibited if a foot and mouth disease outbreak should occur, i.e. exports of beef to the EU are allowed but is governed by very stringent health regulations. This emphasises the important role that sanitary and phyto-sanitary measures can play in determining trade volumes and directions. This is especially important for southern Africa which is known for foot and mouth disease outbreaks.

If Botswana and Namibia do not succeed to renew their quotas with the EU when Lomé IV expires, they may face serious problems. A less accessible EU market will have a negative impact on both economies as they will not find it any easier to find markets in other countries or economic groupings. Competition for markets will be severe over the short term until the distortionary stocks in the developed world have been removed. This will force prices down and the SACU will find it even more difficult to compete with regard to beef exports and imports. This situation may, however, change over the longer run after the distortionary stocks have been sold. Competition may become less severe and prices may increase. The changing demand towards poultry on the international market may, however, also limit SACU's access on international markets (FAO, 1994; 1995).

This section clearly shows that the SACU, with specific reference to its surplus beef producing members i.e. Namibia and Botswana, stand to lose should they lost their quota under Lomé. These countries need to get new marketing strategies in place to be able to tackle the new playing field. One strong point in their favour is the fact that they still raise their cattle on natural grazing.

2.3 The intra-industrial trade coefficient

Intra-industrial trade is also a common feature among countries trading with each other and can thus also be used to explain trade patterns. Intra-industrial trade refers to the phenomena that countries import and export the same commodity in a specific year. In this paper the intra-

industrial trade coefficient (IIT) is used to determine the degree of intra-industrial trade (See Gröbel and Lloyd, 1975 for a detailed discussion of the methodology)

2.3.1 Results

The IIT coefficients in this section are calculated in order to quantify the amount of imported beef which is exported again from a specific country. A coefficient of 0 indicates that a country only imports or exports, while a coefficient of 100 denotes a situation where all the imports are re-exported again i.e. the import volume is equal to the export volume of a specific commodity. A coefficient of 50 means that given an export surplus, one third of the export volume will be imported, and not 50 percent as might be assumed.

- *Intra-industrial trade coefficient of the SACU with the rest of the world*

The IIT for different categories of bovine meat were calculated as well as the total IIT for each of the years under investigation. The results are shown in Table 3.

The IIT coefficient for "other cuts" (chilled) declined from 30,71% to 0,08% from 1992 to 1994. The situation with respect to both categories of the bone in cuts (frozen) went in the opposite direction. The decrease in the coefficient of "other cuts" (chilled) can be attributed thereto that less "other cuts" (chilled) were imported, whilst the amount exported increased. Exports from the SACU went mainly to other African countries, especially Mozambique. The change in the coefficients for "other cuts" (chilled and frozen) may also be attributed to the fact that frozen beef is less perishable.

The IIT coefficient increased substantially from 1992 to 1994 with respect to frozen carcasses and half carcasses. This is mainly due to the fact that imports from Australia to the SACU increased in 1994 and that exports from the SACU to Mozambique increased simultaneously.

It should be noted that the category "frozen deboned beef" have the largest impact on the overall IIT. This is because countries prefer to process beef locally before trade takes place. In other words the value adding process takes place in the producing country, which also contributes to the creation of jobs etc, domestically. Furthermore, "frozen deboned beef" can be transported over longer distances with a smaller risk of spoilage. Bigger volumes of this category of beef are therefore traded.

Table 3: Intra-industrial trade coefficients of the SACU with the rest of the world (1992-1994)

Year	Classes	Different cuts	Intra-industrial trade coefficients (IIT)		
			Chilled	Frozen	Total IIT
1992	Bone in	Carcasses and half carcasses	0	0,15	
		Other cuts	30,71	0	
	Deboned		6,07	56,86	
	Total				32,28
1993	Bone in	Carcasses and half carcasses	0	0,17	
		Other cuts	3,81	0	
	Deboned		1,24	69,85	
	Total				41,37
1994	Bone in	Carcasses and half carcasses	0	86,12	
		Other cuts	0,08	22,55	
	Deboned		0,44	31,62	
	Total				16,97

Table 4: Intra-industrial trade coefficients of the SACU with the EU (1992-1994)

Year	Classes	Different cuts	Intra-industrial trade coefficient (IIT)		
			Chilled	Frozen	Total IIT
1992	Bone in	Other cuts	47,08	0	
		Deboned	4,72	52,72	
	Total				
1993	Bone in	Other cuts	0	0	
		Deboned	1,02	70,45	
	Total				
1994	Bone in	Other cuts	0	0	
		Deboned	0,91	29,08	
	Total				

• *Intra-industrial trade coefficients of the SACU with the EU*

The calculated intra-industrial trade coefficients between the EU and the SACU are shown in Table 4 for 1992, 1993 and 1994. As with Table 3, Table 4 also shows that total intra-regional trade with respect to total bovine meat increased from 1992 to 1993 and decreased in 1994. The SACU trade with the rest of the world is clearly dominated by the EU. Changes in EU policy, demand etc, will therefore have a considerable impact on the beef industry in the SACU.

This situation can be ascribed to the preferential access which Namibia and Botswana has on the EU market under the Lomé Convention. Demand and supply of different qualities of bovine meat may also contribute to this situation. Surplus production of beef in Botswana and Namibia, simultaneous with deficient production in other SACU members, is obviously the reason for the intra-industrial trade. The question should be asked whether Botswana and Namibia would have been able to export to the EU in the absence of the Lomé Convention. If the answer is no, it means that trade between SACU and the EU is artificial and not sustainable.

Differences in quality leads to differences in price (Tomak and Robinson, 1990) and this, in turn, has an impact on trade patterns. Higher quality beef which is more expensive flows to markets where people can afford it, for example the more lucrative European market. They, in turn, will again have an excess amount of lower quality beef and will therefore try to export this beef to countries where there is a demand for lower quality, lower-priced beef. The foregoing emphasises the point made in the previous section about

cattle which are fed on natural grazing, especially if one takes into account that consumer resistance in the EU towards hormone fed beef is on the increase. It is thus envisaged that the demand for beef by the EU may expand in future if local producers succeed in (1) being more competitive and (2) getting the message across.

3. BEEF TRADE INTENSITIES

In this section the Delta-coefficient and the Iterative Proportional Fitting Procedure (IPFP) were used to measure the trade intensity between South Africa, Namibia, Botswana and the rest of the world. The different coefficients from which the Delta-coefficient is calculated also present useful results. The Alpha-coefficient measures the bilateral trade flow of one country relative to total world trade, but contains relatively little information about trade structure. The Alpha-coefficient enables one to make probability statements about the relative importance of each single import or export with respect to total imports or exports, but does not indicate the relative importance of each single flow. The Beta-coefficient and also the Gamma-coefficient can be used to calculate market shares. The Beta-coefficient enables one to measure the relative importance of an individual exporting country for the importing country. The Gamma-coefficient, on the other hand, refers to exports; and measures the relative importance of an individual importing country for the exporting country. All three abovementioned concepts are used to calculate the Delta-coefficient which is defined as the ratio between actual bilateral trade and the trade which would occur if source and destination were statistically independent. A Delta-coefficient greater than 1 indicates relatively intensive trade relations between an importing

country and an exporting country, while a coefficient smaller than 1 indicates the opposite.

The IPFP-coefficient calculates the ratio between the iteratively "normalised" trade flow and the iteratively determined "normalised" flow which would occur if the source and destination countries were statistically independent. The interpretation of the IPFP-coefficient is the same as the Delta-coefficient. For a detailed discussion on the abovementioned coefficients see Becker (1988).

Results regarding trade preferences appear in Tables 5 to 7. The top row in the tables represents importing countries whilst the left column represents exporting countries. No calculations with respect to the rest of the world as importer were made in the tables, since the emphasis is only on South Africa, Namibia and Botswana. The importance of the rest of the world as export market for Namibia and Botswana will, however, be analysed.

Although the IPFP method rendered significant results, instances occurred where Delta-coefficients were larger than 1 together with IPFP-coefficients smaller than 1. This is an indication of inconsistency in trade relations and a definite answer regarding trade intensity is therefore impossible.

3.1 Results

Beef trade between SACU members occurs in different forms i.e. trade in livestock, carcasses and cuts. Trade coefficients were calculated accordingly.

• Livestock

The probability that Namibian livestock will be exported to South Africa is very large, as is shown by the Alpha-

coefficients in Table 5. South Africa is therefore a very important market for livestock exports from Namibia. In contrast, South Africa and Botswana export little of their livestock to the other countries.

Trade relations in livestock from Namibia to South Africa also proves to be intense over time, due to shortages of cattle on the South African market. This phenomenon will continue as long as livestock from Namibia is important to South African feedlots and as long as Namibian farmers receive better prices on South African markets than on their domestic market.

Namibian farmers should determine whether prices in South Africa will continue to be higher over the longer run, especially when the effects of trade liberalisation are taken into account. The cost of transporting livestock is larger than that of cuts and this contributes to inefficiency. Namibia should seriously consider measures to ensure that cattle which is produced locally, be processed locally. This will not only contribute to job creation but also to efficiency. On the South African side consideration should be given to cost effective measures which will increase domestic off-take rates. An important source of cattle which until now has not been utilised to its potential is the subsistence livestock sector. Increased efficiency regarding, amongst other things, animal husbandry will help to achieve this end, especially with respect to increases in calving percentages.

• Carcasses

Table 6 indicates that the probability for Namibian carcasses to be traded, and specifically to be exported to South Africa, is large. The Alpha-coefficients are relatively high in all the years under consideration; South Africa is the only market in the region for carcasses from Namibia. The

Table 5: Coefficients of trade in livestock between countries ignoring internal trade (1992-1994)

Livestock	South Africa (importer)			Namibia (importer)			Botswana (importer)		
	92	93	94	92	93	94	92	93	94
South Africa (exporter)									
Alpha	na	na	na	0,01	0,002	0,005	0,2	0,02	0,006
Beta	na	na	na	0,99	0,99	0,99	0,99	0,99	0,99
Gamma	na	na	na	0,06	0,12	0,45	0,94	0,87	0,55
Delta	na	na	na	>1	>1	>1	>1	>1	>1
IPFP	na	na	na	<1	>1	<1	>1	>1	>1
Namibia (exporter)									
Alpha	0,79	0,97	0,97	na	na	na	0	0	0
Beta	0,99	0,99	0,99	na	na	na	0	0	0
Gamma	0,99	0,99	0,99	na	na	na	0	0	0
Delta	>1	>1	>1	na	na	na	0	0	0
IPFP	>1	>1	>1	na	na	na	0	0	0
Botswana (exporter)									
Alpha	**	0,002	0,013	0	0	**	na	na	na
Beta	**	0,002	0,013	0	0	0,1	na	na	na
Gamma	0,4	0,98	0,95	0	0	0,05	na	na	na
Delta	<1	<1	<1	0	0	>1	na	na	na
IPFP	<1	<1	<1	0	0	>1	na	na	na
Rest of the world (ROW) (exporter)									
Alpha	0	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0	0
Delta	0	0	0	0	0	0	0	0	0
IPFP	0	0	0	0	0	0	0	0	0

na - not applicable

Note: ** indicates a coefficient of £ 0,001

Table 6: Coefficients of trade in carcasses between countries ignoring internal trade (1992-1994)

Carcasses	South Africa (importer)			Namibia (importer)			Botswana (importer)		
	92	93	94	92	93	94	92	93	94
South Africa (exporter)									
Alpha	na	na	na	0	0	0	0,02	0,15	0,01
Beta	na	na	na	0	0	0	0,76	0,99	0,99
Gamma	na	na	na	0	0	0	0,99	0,99	0,99
Delta	na	na	na	0	0	0	>1	>1	>1
IPFP	na	na	na	0	0	0	>1	>1	>1
Namibia (exporter)									
Alpha	0,94	0,72	0,99	na	na	na	**	0	0
Beta	0,99	0,97	0,99	na	na	na	**	0	0
Gamma	0,99	0,99	0,99	na	na	na	**	0	0
Delta	>1	>1	>1	na	na	na	<1	0	0
IPFP	>1	>1	>1	na	na	na	<1	0	0
Botswana (exporter)									
Alpha	0,003	0,02	**	0	0	0	na	na	na
Beta	0,003	0,02	**	0	0	0	na	na	na
Gamma	0,11	0,14	0,98	0	0	0	na	na	na
Delta	<1	<1	<1	0	0	0	na	na	na
IPFP	<1	<1	<1	0	0	0	na	na	na
Rest of the world (ROW) (exporter)									
Alpha	0	0	0	0	0	0	**	0,002	0
Beta	0	0	0	0	0	0	0,24	0,01	0
Gamma	0	0	0	0	0	0	0,99	0,99	0
Delta	0	0	0	0	0	0	>1	>1	0
IPFP	0	0	0	0	0	0	>1	>1	0

na - not applicable

Note: ** indicates a coefficient of £ 0,001

Beta-coefficients, on the other hand indicate that Namibian carcass exports are important for South Africa. The high Beta- and Gamma-coefficients of Botswana show that in relative terms, South Africa is important to Botswana.

Both the Delta- and IPFP-coefficients show that for South Africa as an importing country of carcasses, trade with Namibia was relatively intense but not with Botswana. Imports of carcasses from South Africa to Botswana was, however, relatively intense from 1992 to 1994. It must, however, be noted that Botswana imported very small quantities of carcasses in absolute terms. The reason for the high coefficients is that when Botswana imported any form of beef they preferred to do this from South Africa.

• Cuts

Table 7 shows a relative low probability of trade in cuts within the region. It should, however, be noted that the Alpha-coefficient for beef exported from Namibia to South Africa is not as low as the others; it does, however, show a declining trend. The low Alpha-coefficients can be explained by the fact that higher prices for cuts can be obtained elsewhere.

Botswana and Namibia obtain higher prices in the EU under Lomé, and this makes the EU important to them. On the other hand, they have become less important to South Africa because she has started to find it cheaper to import from elsewhere. This is a very clear picture of how trade policies distorted trade flows and directions. Social welfare is not attained in this situation nor is pareto optimality reached.

The Beta-coefficient for imports from the rest of the world to South Africa shows that the importance of the rest of the world as a source of cuts increased whilst the importance of

Namibia decreased. According to the results in Table 7, South Africa is an important market for Namibia but not for Botswana. South Africa has tended to import from the rest of the world rather than from Botswana.

Trade relations in cuts remained intense over time between South Africa and Namibia as well as between South Africa and the rest of the world. Botswana's results regarding trade intensity proved to be inconclusive. This can be attributed to the rather small imports of beef cuts to Botswana and the fact that no preference with respect to the source is shown. The results show that South Africa and Namibia have very close trade relations with one another, both as importers and exporters. The growing importance of the rest of the world as a source of cuts for South Africa should, however, be a source of concern to Namibia.

3.2 The importance of the rest of the world to Namibia and Botswana

Namibia and Botswana's exports to countries outside the SACU are mainly directed to the EU under the Lomé Convention. The probability for Namibian cuts to be exported to the rest of the world was estimated at between 12% and 22% where as for Botswana it is between 15% and 31%. The Beta-coefficients calculated for Botswana and Namibia showed that the rest of the world perceives Botswana as a more important source of cuts than Namibia.

A possible reason is Botswana's longer history of beef trade and the larger quantity of her exports to the rest of the world.

The magnitude of the importance of the rest of the world to Namibia and Botswana is, however, of major importance. The results obtained with respect to Namibia ranged

Table 7: Coefficients of trade in cuts between countries ignoring internal trade (1992-1994)

Cuts	South Africa (importer)			Namibia (importer)			Botswana (importer)		
	92	93	94	92	93	94	92	93	94
South Africa (exporter)									
Alpha	na	na	na	0,007	0,008	0,016	0,007	**	**
Beta	na	na	na	0,99	0,99	0,99	0,99	0,99	0,99
Gamma	na	na	na	0,48	0,92	0,98	0,52	0,08	0,01
Delta	na	na	na	>1	>1	>1	>1	>1	>1
IPFP	na	na	na	>1	>1	>1	<1	<1	<1
Namibia (exporter)									
Alpha	0,29	0,24	0,17	na	na	na	**	0	0
Beta	0,66	0,51	0,24	na	na	na	**	0	0
Gamma	0,56	0,53	0,57	na	na	na	**	0	0
Delta	>1	>1	>1	na	na	na	<1	0	0
IPFP	>1	>1	>1	na	na	na	<1	0	0
Botswana (exporter)									
Alpha	0,06	0,08	0,05	0	0	0	na	na	na
Beta	0,13	0,17	0,08	0	0	0	na	na	na
Gamma	0,15	0,21	0,26	0	0	0	na	na	na
Delta	<1	<1	<1	0	0	0	na	na	na
IPFP	<1	<1	<1	0	0	0	na	na	na
Rest of the world (ROW) (exporter)									
Alpha	0,09	0,14	0,48	0	0	0	**	**	**
Beta	0,21	0,31	0,68	0	0	0	**	**	**
Gamma	0,99	0,99	0,99	0	0	0	**	**	**
Delta	>1	>1	>1	0	0	0	<1	<1	<1
IPFP	>1	>1	>1	0	0	0	>1	>1	>1

na - not applicable

Note: ** indicates a coefficient of £ 0,001

between 43% and 46%, lower than the Gamma-coefficients calculated for South Africa (Table 7). This indicates that Namibia perceives South Africa as a more important market than the rest of the world. Conversely, the results obtained indicate that Botswana perceives the rest of the world as a more important market for beef cuts than South Africa. In the Botswana case, the Gamma-coefficients ranged between 73% and 85%. The largest percentage (i.e. 64,9%) of Botswana's exports is directed to the EU. This makes her more vulnerable towards any changes in EU policy, CAP prices etc.

The IPFP-coefficients showed trade relations between Namibia and the rest of world to be quite intense from 1992 to 1994. Similar results were obtained with respect to trade relations between South Africa and Namibia.

Trade relations between Botswana and the rest of the world also proved to be intense over time, but not between Botswana and South Africa.

4. CONCLUSION

Trade coefficients calculated for South Africa, Namibia and Botswana clearly show that trade relations between South Africa and Namibia are intense, but not between South Africa and Botswana. Botswana prefers to trade with countries in the EU and intense trade relations have developed over time. Namibia's trade relations with the rest of the world is intensive, but she still perceives South Africa as her most important market. The relative intensive trade relations between Namibia, Botswana and the EU can be ascribed to the Lomé Convention and is risky, especially when the uncertainty regarding the renewal of the current quota is taken into account, and when consideration is taken of the fact that prices cannot be guaranteed.

Results showed that the rest of the world is becoming a more important source of beef to South Africa. Trade patterns and preferences discussed can in general be ascribed to past policies, trade barriers and years of economic sanctions against South Africa. Since 1992, when markets became more open for Namibia and South Africa, a change, although not yet significantly large, occurred. One may therefore expect future trade to be less concentrated. This change will be a rather slow process as new markets are explored and developed. Sanitary and phyto-sanitary measures may, however, limit and/or retard the process. If Namibia and Botswana do not explore new markets it can result in serious damage to their beef industries. Competition will increase on the EU market, whilst the new markets in the Pacific Asian Rim will enlarge and should be developed. However, competition in these markets will be intense, with Australia and New Zealand being the major rivals.

Price plays the major role in the demand and supply of beef and policies that discriminate against countries trading with beef give rise to skew and sub-optimal distribution patterns of beef. In the absence of any distorting policies where competitive advantage determines trade patterns, local producers may place a higher premium on international markets while local butchers or processors may likewise prefer beef from other countries rather than from domestic producers. Quality of beef will also have an influence on the pattern of trade, since higher quality beef will flow to higher priced markets, whilst the opposite will occur with regards to low quality beef.

Local beef industries will have to increase productivity in order to increase competitiveness on international markets. Major factors which will influence productivity and hence competitiveness include land tenure systems, efficiency in

the production of cattle, transparency in tariff policies, infrastructure such as transport systems, the location of abattoir facilities and the ability to adapt to the changing environment. Van Rooyen *et al* (1995) stated that regional comparative advantages have hardly been exploited. This statement has been quantified in this paper. The fact of the matter is that the current situation is not sustainable and will have to be changed to bring about higher social welfare in the whole of southern Africa. This may be even more important if trade is regarded as the engine of growth in southern Africa.

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